

**Ecosystem Based Management Working Group
U. S. Coast Guard Station, Boston, MA
10:00 AM – 5:00 PM
12 January 2004**

Meeting Summary

Summary of Action Items:

- 1. ACTION:** The Ecosystem Management Working Group should now be called the Ecosystem Based Management Working Group.
- 2. ACTION:** SBNMS staff will change the previous meeting's minutes to reflect the WG's comments.
- 3. ACTION:** John Williamson will coordinate with Superintendent Craig MacDonald to get a statement from NOAA's General Council regarding SBNMS's ability to regulate fishing.
- 4. ACTION:** WG members want Ben Cowie-Haskell to provide a comprehensive site characterization PowerPoint with accompanying slides distributed to the members.
- 5. ACTION:** WG members want Ben Cowie-Haskell to provide a presentation on the uses and economic value of the sanctuary.
- 6. ACTION:** WG members want SBNMS Science Coordinator David Wiley to present a detailed examination of human use of the sanctuary.
- 7. ACTION:** Les, Larry, Peter, Jon, and David will develop a definition of Ecosystem Based Management.
- 8. ACTION:** Les, Larry, Peter, Jon, and David should continue developing a straw man draft document on what SBNMS should consider for an ecosystem based management plan.
- 9. ACTION:** The next WG meeting will be 23 February 2004 in Boston.

Working Group Attendees

Name	Affiliation
John Williamson	SAC Member Chair
Ben Cowie-Haskell	SBNMS Co-Team Lead
Susan Faraday	Ocean Conservancy
Paul Howard	NEFMC
David Pierce	DMF
Larry Madin	WHOI
Peter Auster	NURC
Tony Wilbur	Coastal Zone Management

Dave Casoni	Commercial Fishing Industry
Dierdre Kimball	NOAA Fisheries
Les Kaufman	Boston University Marine Program
Tom Connelly / Alt. For Jerry Hill	Recreational Fishing Industry
Tom DePersia	Recreational Fishing Industry
Ed Barrett	Commercial Fishing Industry
Priscilla Brooks	Conservation Law Foundation
Jon Brodziak	Northeast Fisheries Science Center

Working Group Members Absent

David Wiley, SBNMS Co-Team Lead

Others Present

Michael Doebly, Recreational Fishing

David Moore, student

Kate Smuckler, NOAA Marine Protected Areas

Katrina VanDine, SBNMS Staff

Matthew Lawrence, SBNMS Staff and rapporteur

WELCOME, INTRODUCTIONS, AND OPENING COMMENTS BY JOHN WILLIAMSON

Each working group member provided his or her name and affiliation. The working group's contact information was distributed to its members. The working group altered its title to "Ecosystem Based Management Working Group"

***ACTION:* The Ecosystem Management Working Group should now be called the Ecosystem Based Management Working Group.**

DISCUSSION OF MINUTES FROM PREVIOUS MEETING

John Williamson asked the Working Group (WG) to approve the minutes from the previous meeting. The WG wanted several changes to the minutes before approval.

- Add Action Item: Les, Larry, Peter, Jon, and David will develop a definition of Ecosystem Based Management.
- Change decision to consensus where minutes describe the presentation of the WG's findings to the SAC.
- Change to EIS and or Environmental Assessment
- Page 5: "cooperation and coordination of agencies" should replace New England Fisheries Management Council.
- Page 5: Action item should be "Copy Ecosystem Based Fisheries Management document.
- Action Item 9: Science members should include Larry and that it should still be considered an unfulfilled action item.
- Page 3: Change meetings "once a week" to "once a month."

ACTION: SBNMS staff will change the previous meeting's minutes to reflect the WG's comments.

DISCUSSION OF LAST MEETING AND PROTOCOL

The deadline for alternates has passed. Tom Connelly is sitting in for Jerry Hill at this meeting. Observers are welcome at the meeting, however they cannot engage directly in the discussion at the table. They may voice their opinions through their representatives at the table.

BEGIN ROUND TABLE DISCUSSION

The WG seeks to manage human activities within an ecosystem context. Different groups interpret this task in different ways. WG members were asked to express their views on what Ecosystem Based Management (EBM) means to them.

-Les Kaufman

There is a distinction between what EBM is and how you do it. Need to move from a place of making decisions based on knowledge of a single species (information poor) to a place where decisions are made in an information rich environment. In process you apportion changes into natural vs. anthropogenic. You do this with experimentation. Study habitat maps, climatic changes, system parameters, habitat structure, and changes in animal behavior. You should seek to conduct adaptive management (management conducted as an experiment). Steps to this process are: Ask question, Get experimental info, and check to see if management has desired result. One of the key pieces of information needed is to know where people are going and what they are doing. It is difficult to set up a rigorous experiment. Determining change is the easy part, but determining what is causing the change is the key to managing the resource. Scientist investigating the SBNMS ecosystem are only presenting scenarios for the change, they are not making value judgments about it. Scientist should only consider closing areas if it is necessary.

-Ed Barrett

Experimental control is impossible because the system is too dynamic. SBNMS is too small already; there shouldn't be anymore closed areas

-Peter Auster

We shouldn't call areas closed to human activity control sites instead they should be considered reference sites. EBM should consider the processes and structure of the ecosystem. EBM should maintain biological diversity. To do that it is important to consider the rate of decision-making vs. information needs. Grumbine offers a good definition of EBM. The WG should pin down the goals of EBM.

-David Pierce

EBM is plagued by problems defining terms, such as, ecological resiliency what exactly does that mean. There are two keys to EBM: one, monitoring and research and two, adaptive management. He asks; do you need no take reserves to undertake EBM? Unsure as to what natural equilibrium looks like. He believes that you should eliminate as many human impacts from reference sites, but it will still take decades to achieve natural

equilibrium. Grumbine's 5 aspects of EBM sound good but he needs definitions of the terms Grumbine uses. Need to know what processes are affecting the ecosystem. His definition of EBM is: Conserve the ecosystem structure and function through an understanding of its complex dynamics. David Pierce reads the document he prepared about how you undertake EBM.

1. Determine acceptable amounts of societal impacts
2. Undertake adaptive management, overcome political boundaries, and take action even when uncertainty exists.
3. Need more information, greater research funding
4. Define biodiversity, maintain, and protect it. Provide SBNMS with a definition to work towards.

-Paul Howard

Definitions of diversity are the same as in fishery management. In actuality, you cannot undertake adaptive management. The WG must not lose track of the details, such as the legal process and bureaucratic requirements that SBNMS must operate under.

-Jon Brodziak

The size of closure areas provides a measure of information. It is possible to measure biodiversity approximately using indicators. For example, the MWRA appears to be the source of a major system perturbation it should be possible to develop a set of metrics to see if that is the case. Metrics can measure what human impacts are, but also measure human benefits.

-Tom DePersia

Asks is it possible to set up reference areas outside of SBNMS? He suggests finding a place farther from the crowded metropolitan area surrounding Massachusetts Bay that will infringe less on the groups who use SBNMS. He states that one of the unique features of SBNMS is its proximity to Boston and other ports allowing day users to catch big fish.

FISHING INTERESTS PRESENT ON THE ECOLOGICAL SYSTEMS THEY EXPERIENCE

Ed Barrett used a Western Gulf of Maine nautical chart to depict his experiences. Beginning in 1990 there were relatively few fishing regulations in the area. 50-75 foot boats conducted 24-hour operations, staying on the water until the trip was made. Used large roller gear (24") on the Middle Bank to prevent their trawls from hanging in the cobbles. Fish stocks were diminishing on the Middle Bank. After amendment 5, which reduced roller size from 24" to 12" the gill-netters were catching flounders and yellowtail in the same area. Trawlers could no longer operate in the area with their 12" rollers so they moved west. In 1998 the Western Gulf of Maine Closure displaced the tub trawl in the eastern area of SBNMS. At the same time a boom in the dogfish population during the months May-Sept. made it unprofitable to fish on the top and west side of the Bank. A developing dogfish fishery developed and the number of dogfish dropped. In the closure areas greater amounts of fixed gear sprang up now that trawlers were not breaking the lines. Trawlers now limit their activities to west of a loran line that delimits the hard bottom east of the bank. Trawlers are also not catching small fish < 21" because

of the mesh size limitations. Because of the closures, fish stocks have a higher rate of mortality because of a bonanza mentality by fishermen.

Tom DePersia, a charter boat fisherman, also used a Western Gulf of Maine nautical chart to depict where fish are living at different times of the year. From December to April, he fishes the western edge of the bank and on top of the bank. His customers target ground fish. The bag limit imposed on charter boat customers has severely hurt his business. He has experienced a great increase in the number of haddock being caught off his boats. Thirty years ago very few haddock were caught, now 40-50% of fish caught are haddock. In cold months (Dec-Apr) mostly cod are caught. From May-Nov., fish move east of the bank. During these months, his customers catch 40% cod and 40-50% haddock. He also fishes for shark and bluefin tuna east of the bank in warmer months. He has seen a marked decrease in the food fish, such as sand eels and herring. Now fish are caught using bait rather than the unbaited jigs of previous years. Dogfish seem to be taking over the sanctuary. When they try to catch tuna, they catch dogfish, even when they are jigging for cod at depths of 360 ft they are catching dogfish. SBNMS's accessibility makes the sanctuary unique. The possibility to catch big fish during a day trip is one of the sanctuary's most valuable assets. When he fishes he moves from specific spot to specific spot looking for the fish, which migrate from location to location. Overall, charter boats aren't extracting much fish compared to commercial fishing. One of the WG members quotes the statistic that charter boats extract 20% of the overall cod catch from the Western Gulf of Maine. Tom doesn't feel entirely comfortable speaking about the charter boat activities north of the bank that are the territory of the Cape Ann charter boats. Jerry Hill normally represents this segment. John Williamson asks Tom DePersia if he can characterize any patterns he has experienced over the past 30 years. Tom replies that it is now like it was 30 years ago. He rarely catches fish smaller than 23". In particular the haddock fishery is coming back strong, but the tuna fishery is bad, the last year having few large fish caught.

Dave Casoni describes his experiences lobstering. He does not fish in SBNMS. He feels the migrating fish and lobsters make research areas a difficult proposition and that if you shut out the fishermen then you lose a valuable research tool. David Wiley's research doesn't accurately tell you how many traps are on the bottom. SBNMS is part of zone 19 in which there are 91 fishermen lobstering. There is a concentration of fishing done in the SW of SBNMS because of its accessibility to the harbors on Cape Cod Bay. Lobstermen like when mobile gear limits for lobster are set because it discourages trawlers from mowing through a patch of lobster gear. Lobster landing spiked in 1996 at a high of 3 million pounds but fallen partly because the number of traps allowed was set at 800. Dave Casoni also speculates that landing dropped because of the population increases in ground fish and dogfish.

WG COMMENTS ON INFORMATION PRESENTED BY MEMBERS

WG members felt that there should be region wide indicators such as fisheries and habitat to assess the state of the ecosystem in SBNMS and that if the sanctuary wants to take on EBM it would be important not to let smaller components of the ecosystem fall through

the cracks. The WG would like to know what is the current shape of the ecosystem by looking at what is going in and what is coming out.

One way to do this might be computer modeling such as the Georges Bank model described by Larry Madin. To conduct this type of model it is necessary to have a reference site to conduct experimentation. SBNMS actually may be an ideal place to develop EBM since its system has such a whole host of variables. WG members pointed out that fishermen displaced by research sites would likely continue fishing and would put increased fishing pressure on different fisheries.

ACTION: Working group wants Ben Cowie-Haskell to provide a presentation on human uses and the economic value of SBNMS.

David Pierce is putting together a use characterization of the sanctuary.

PRESENTATION ON THE MWRA BY CARLTON HUNT OF BATTELLE

There is little change in Massachusetts Bay dissolved oxygen since MWRA operation commenced. Testing has the capability to resolve small changes in phytoplankton production, no change has been observed. The outfalls signature is very small compared with natural events such as storms or river input. Ammonia is the strongest effluent signature, but it is not detectable far from the outfall and not in SBNMS at all. The effluent plume disperses to concentrations less than 800 to 1 before it reaches SBNMS. SBNMS contracted with Battelle for 4 more sampling station to augment the MWRA station. No water quality difference has been observed in results from baseline years. Fishing interests are concerned about the MWRA and believe that it is causing decreased sand lance populations. Even in periods where the MWRA is at its greatest flow 80% of the outflow is treated. During regular periods, 99% of the outflow is treated.

PRESENTATION ON ECOSYSTEM BASED MANAGEMENT BY JON BRODZIAK

How to accomplish EBM was the focus of Jon Brodziak's presentation. His approach stressed interagency cooperation with three specific components.

1. Tangible Goals
2. Multiple Metrics
3. Adaptive Management

There are many different metrics to use but are categorized into Biotic, Abiotic, and Human. To be valuable metrics must have directionality, sensitivity, generality, feasibility, and uncertainty/reversibility. There are multiple metrics because of diverse human value systems.

WG DISCUSSION OF GOALS AND A MISSION STATEMENT

Fishing interests wanted a clarification from NOAA regarding the belief that SBNMS could not regulate fishing activities. Ben Cowie-Haskell provided information stating that the National Marine Sanctuaries Act allowed sanctuaries to manage fishing activities. Fishing interests believe that the implementation legislation precludes the sanctuary from managing fishing. Ben Cowie-Haskell described the process the sanctuary would use to create fishing regulations that involves public comment, the National Marine Fisheries

Service, and the New England Fisheries Management Council. Fishing interests want a statement from NOAA's General Council stating whether SBNMS can regulate fishing.

ACTION: John Williamson will coordinate with Superintendent Craig MacDonald to get a statement from NOAA's General Council regarding SBNMS's ability to regulate fishing.

Discussion of this issue was not moving forward, John Williamson suggested to that the working group move forward by focusing on the WG process. The WG was charged with formulating a variety of goals and scenarios directed toward the question, What is the function of EBM in the sanctuary? Is SBNMS supposed to be more like a National Park or more like a National Forest? The public places value on having pristine areas even if they will never visit them. Each user group has a perception of what SBNMS is like from their experiences within the sanctuary. It is important to look at the public scoping comments to capture how the public feels about SBNMS. Underwater imagery helps to convey the uniqueness and diversity of wildlife in SBNMS, particularly on hard bottom areas. Further research needs to be conducted to identify these hard bottom areas. However, it may never be possible to restore SBNMS to pristine condition and maybe effort should be expended in other areas such as the Rose and Lucy Basin. Efforts to protect ecosystems should focus on hard bottom areas where the greatest diversity of life resides.

When discussing the goals for SBNMS WG members pointed out that the whole range of possibilities should be discussed. As for a working definition of EBM, most felt that Grumbine offered the best definition. His definition should be considered in light of the findings section of the National Marine Sanctuaries Act and the purposes and policies of that act. Unfortunately, some of Grumbine's definition has terms that can have wide latitude in their interpretation and meaning. The unknown ramifications of some of the terms used by Grumbine caused fishing interests on the working group to be unsatisfied with Grumbine's definition of EBM. Ben Cowie-Haskell suggested to the working group that interest group within the WG should create scenarios for how they want to EBM to proceed. These scenarios should include:

1. An overall goal
2. How does the scenario meet the goals of the National Marine Sanctuaries Act?
3. Information needs to meet the goal
4. Management tools needed
5. Indicators to determine if EBM works

The WG disagreed with Ben Cowie-Haskell's suggestion and decided that before it could proceed it needed to learn about:

1. What comprises the SBNMS's ecosystem?
2. What things are being introduced into the sanctuary?
3. What is being extracted from the sanctuary?

The WG believed that there were basically only three scenarios

1. National Park protection/no extraction
2. Balanced protection and extraction
3. Sustainable extraction

Rather than breaking down into groups to formulate scenarios, the WG felt that it could best formulate the three scenarios as a whole. The goal they decided was to apply ESB management to sanctuary management.

ACTION: WG members want Ben Cowie-Haskell to provide a comprehensive site characterization PowerPoint with accompanying slides distributed to the members.

ACTION: WG members want SBNMS Science Coordinator David Wiley to present a detailed examination of human use of the sanctuary.

ACTION: Les, Larry, Peter, Jon, and David will develop a definition of Ecosystem Based Management.

ACTION: Les, Larry, Peter, Jon, and David should continue developing a straw man draft document on what SBNMS should consider for a ecosystem based management plan.

ACTION: The next WG meeting will be 23 February 2004 in Boston.